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**Complex responses of living neurons to pacemaker inhibition: a comparison of dynamical models**

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**Abstract**

A neuron can respond to periodic inhibitory input with a variety of complex behaviors, periodic and aperiodic. We present a succession of models to test hypotheses for mechanisms underlying complex behavior generation. Model comparison using non-linear dynamics techniques indicates that long-duration IPSP aftereffects and spiking behavior are necessary for most of the basic response properties, though not sufficient for some of their more subtle aspects.

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